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ABSTRACT

School facilities needs in rural America and the means to meet them are affected by rural population trends, building inadequacies and obsolescence, and financial problems. Overall, America's schools have seen increased public school enrollments since the mid-1980s, but rural enrollments have declined, particularly in communities with fewer than 2,500 inhabitants. However, rural population trends vary greatly across and within states. Long-term underinvestment in school facilities has left a legacy of crumbling school buildings in many communities. In 1996, 52 percent of rural schools had at least one inadequate building feature, and 54 percent had at least one unsatisfactory environmental factor. In addition, older rural schools had great needs to improve energy efficiency, upgrade the building infrastructure that supports new technology systems, provide flexible spaces to accommodate new teaching formats and expanded school services, and meet access requirements for individuals with disabilities. Because rural districts have lower enrollments, inadequate tax bases, and regulatory limits to their debt, they often cannot generate the revenues required to build school facilities. In addition, many have higher poverty levels and less ability to support local bond initiatives. Practical strategies for funding rural schools include state capital funding, state building authorities, interest-free or tax-credit bonds, converting vacant buildings, and increasing support through lobbying and public awareness campaigns. (Contains 30 references.) (SV)

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CHAPTER 1

ED 445 856

# Trends and Issues Affecting School Facilities in Rural America: Challenges and Opportunities for Action

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While the rest of the nation has scrambled to accommodate growing school enrollment, rural America has experienced a slight enrollment decline. Within that overall trend there is great regional variation; however, rural and urban school districts alike face the challenge of decaying and outmoded buildings, with many districts at a severe disadvantage in obtaining funding to improve or replace facilities. This chapter discusses all of these issues using national studies and data sets.

## Rural Population Trends

Researchers have increasingly noted the growing number of children entering America's public schools. This phenomenon, referred to as the *baby boom echo*, began in elementary schools in 1984. Enrollment at the national level has increased every year since and is predicted to result in a 26 percent increase in the number of children in high school between 1988 and 2008.[1] Twenty states will experience at least a 15 percent increase in the number of public high school graduates.[2] This baby boom echo differs from the baby boom because the number of school-age children is not projected to decline substan-

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tially after these children have passed through the nation's public schools.[3] The data suggest that larger enrollments are here to stay.

Overall, this trend toward increasing enrollment has not been observed in rural America, especially in communities of 2,500 people or less. A recent study by the Rural School and Community Trust reported that at least 20 percent of rural schools in every state have experienced a decline in enrollment between 1994 and 1997.[4] In settlements of 2,500 people or less, the decline averaged nearly 4 percent, with some states seeing a decline of more than 10 percent. Figure 1.1 shows the contrast between the total school-age population in the nation to that in settlements of 2,500 or less.

On closer examination, the population trends in rural areas get more complicated. Data from 1990-1997 suggest that growth in nonmetropolitan areas was mostly due to the in-migration of people from the nation's cities and urban areas. Nearly three-fourths of the nation's nonmetropolitan counties gained people of all ages, but the counties with the largest gains were retirement and recreational destinations, areas that tend to attract people of nonchildbearing age. Thus, a contributing factor leading to declining enrollments in rural schools is a high proportion of elderly residents, leading to low birth rates.[5]

However, during the latter part of that time period, the proportion of people age 65 and older began to decline in rural areas due to another wave of in-migration, this time of young people of childbearing age. Between 1995 and 1997, the number of early career individuals (age 26-30) increased by 2 percent a year, and the number of children (ages 1-17) increased by 1.3 percent. That trend is now five years old, and the growing number of young families is slowing the decline in school-age population in some rural communities.[6]

There is a great deal of variability in the population trends across rural America. Recent data suggest that both the baby boom echo and rural population growth are concentrated in specific regions of the nation, with the western and southern regions accounting for the greatest shares.[7] Regions vary in nonmetropolitan population growth, with the western region experiencing the greatest increase, as Figure 1.2 shows. Figure 1.3 illustrates changes in rural school enrollment by state.[8] It is important to note that state-level data may disguise regional variability within states—some states may be experi-

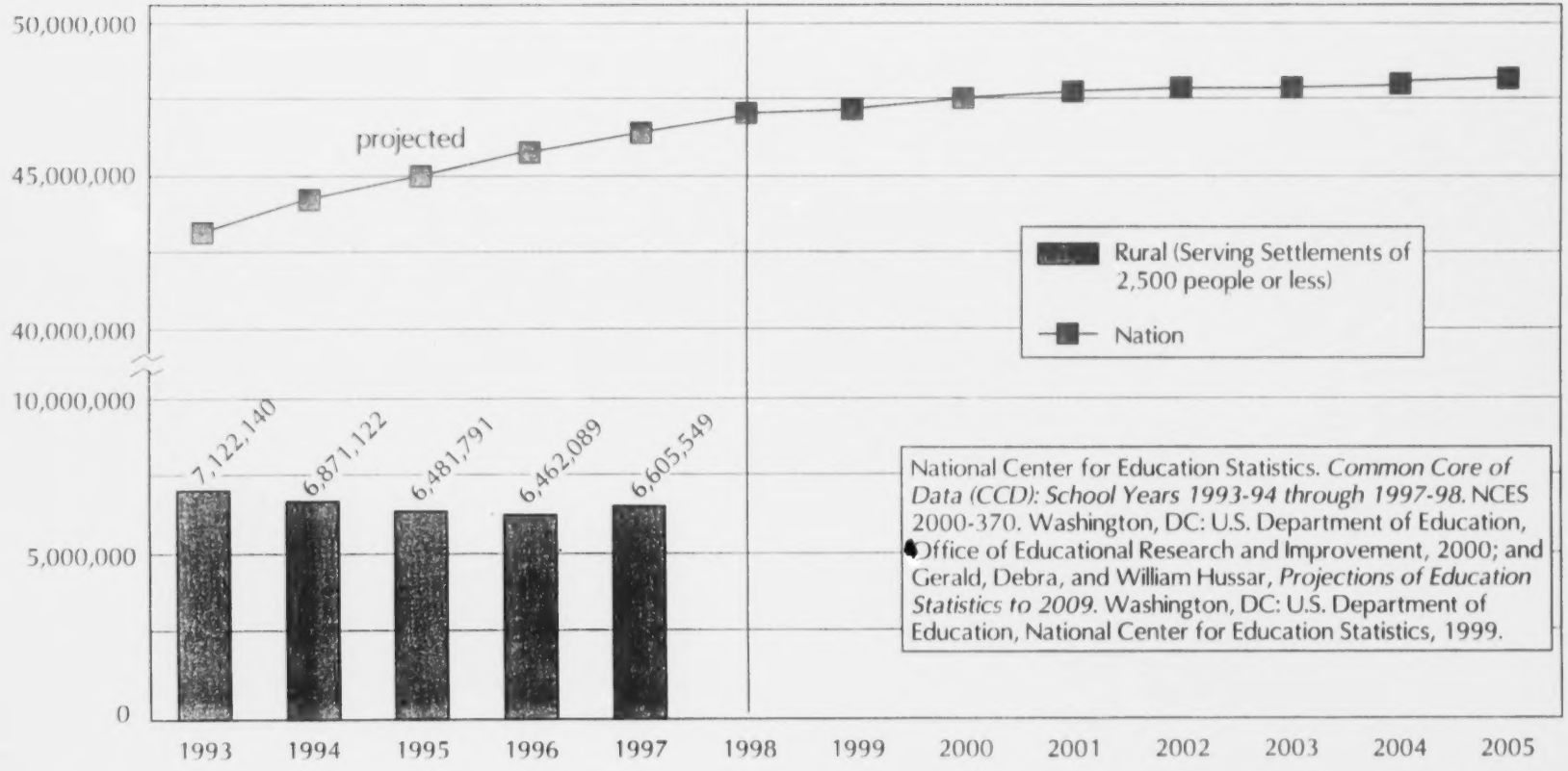


Figure 1.1. Total number of students enrolled in public schools in rural areas and total number of students enrolled in public schools nationwide

Figure 1.2. Nonmetropolitan population change, 1990-1997.

Reprinted with permission from Beale, Calvin, "Nonmetro Population Rebound: Still Real but Diminishing," *Rural Conditions and Trends* 9(2): 20-27 (1999), (USDA, Economic Research Service). Original data source: calculated by ERS using data from the Bureau of the Census.

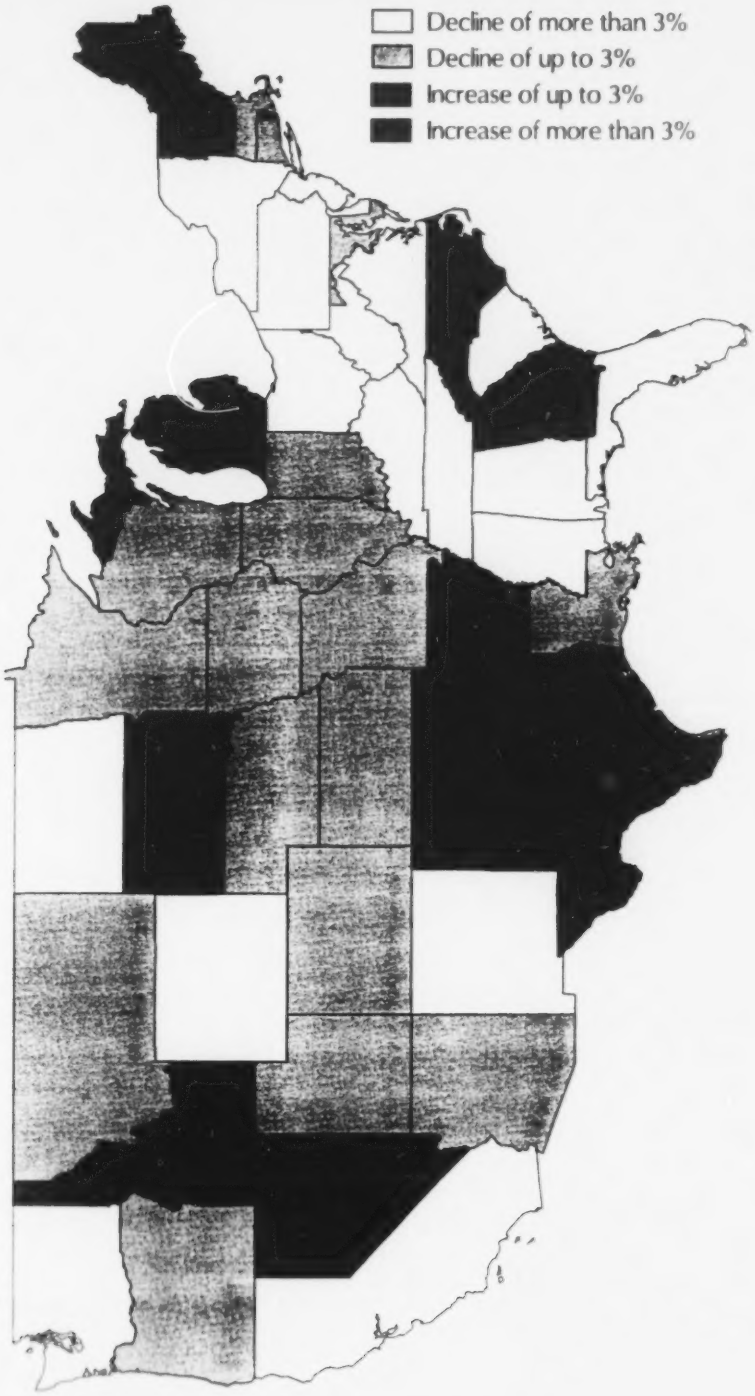


Figure 1.3. Percent change in the number of students in rural schools (schools serving a population of 2,500 or less), 1994-1997.

National Center for Education Statistics. *Common Core of Data (CCD): School Years 1993-94 through 1997-98*. NCES 2000-370. Washington, DC: U.S. Department of Education. Office of Educational Research and Improvement. 2000.

encing rapid rural school-age population growth in only one area of the state. This map does not illustrate such dynamic demographic changes within states. Figure 1.3 suggests that some southern and western states, as well as some states in the Midwest, are experiencing growth in public school enrollment in rural settlements of 2,500 people or less. These states may need to increase investments in rural school infrastructure to accommodate student population growth.

Some rural areas of the nation will likely continue to experience population growth, while others experience decline. Therefore, state-level decisions regarding facility construction will have to respond to the unique population trends taking place in the rural areas of each state.

## The Condition of the Nation's Rural Schools

Long-term underinvestment in school facilities nationwide has left a legacy of crumbling school buildings in many communities. In 1995, the General Accounting Office (GAO) conducted a survey of a nationally representative sample of school districts to gain an understanding of school facilities needs across the country. Data from the study indicated a need for $112 billion to complete the repairs, renovations, and modernizations required to help school districts comply with federal mandates.[9] More recently, the National Education Association surveyed the departments of education in all 50 states and asked them to identify repair and modernization costs, the costs of constructing new buildings to accommodate increasing enrollments, and the costs associated with upgrading the telecommunications in their schools. According to this study, the cumulative approximate costs for renovation, upgrades, and new construction will be $268.2 billion. The costs associated with technology upgrades will add another $53.7 billion.[10] Nationwide annual expenditures on school construction only averaged between $9 billion and $11 billion between 1989 and 1996, although this increased to nearly $17 billion in 1998.[11]

The data collected in the GAO study remain the most comprehensive available on the quality and condition of school facilities across the nation. While there are some limitations to this study, it provides information about the most pressing school facilities issues in America. According to the GAO study, one-third of all school buildings need

major repairs or replacement. Another 40 percent need repair or replacement of one or more building features, such as the plumbing fixtures or the roof. Two-thirds of the districts surveyed reported needing funding to comply with federal mandates over the next three years. Some of these mandates include the removal of asbestos, the removal of lead in water or paint, and the control of radon. Forty-one percent of all districts reported unsatisfactory energy efficiency.[12]

The GAO study also provides data on the condition of school buildings according to their geographic location. It suggests that central city urban schools are most likely to report significant building problems and unsatisfactory conditions. But a large number of rural schools also report a range of facility problems, including problems with building structures, environmental conditions, and access to technology elements. Table 1.1 provides information on these building features. Reports showed 30 percent of rural schools with at least one building in inadequate condition, and 51 percent of rural schools

**Table 1.1**
**Estimated Percent of Schools with Inadequate Building Features by Community Type**

| Building Feature | Central City | Urban Fringe/ Large Town | Rural/ Small Town |
|---|---|---|---|
| Roofs | 32.8 | 26.9 | 23.9 |
| Framing, floors, and foundations | 22.2 | 15.1 | 16.7 |
| Exterior walls, finishes, windows and doors | 34.3 | 24.8 | 22.4 |
| Interior finishes | 29.8 | 23.4 | 20.8 |
| Plumbing | 34.2 | 27.0 | 28.6 |
| HVAC | 41.7 | 36.0 | 33.1 |
| Electrical power | 31.8 | 26.7 | 22.7 |
| Electrical lighting | 29.4 | 26.3 | 21.7 |
| Life safety codes | 21.9 | 20.0 | 16.4 |
| At least one inadequate building feature | 66.6 | 56.8 | 51.7 |

*Note: Sampling errors for estimates based on percent of schools are less than +/- 4 percentage points.*

Source: General Accounting Office, *School Facilities: America's Schools Report Differing Conditions*, Table II.7, 1996.

with at least one inadequate building feature.[13] Twenty-four percent of all rural schools needed roof repairs, and 29 percent had problems with plumbing.[14] Other problem areas included foundations and flooring, electrical wiring, and exterior finishes.

**Energy efficiency.** There is a great need to improve the energy efficiency of rural building structures and systems. Since the 1970s, the increase in heating and lighting costs for rural school facilities has continued to take a large percentage of the education budget. The major problems in most older rural schools include inadequate or nonexistent insulation in buildings, windows, and exterior doors; lack of weather stripping on exterior doors; old or nonexistent exterior sealant; and inefficient furnaces, boilers, and electrical lighting.[15] Table 1.2 provides information on environmental issues in rural school buildings.

**Environmental conditions.** The GAO survey showed 54 percent of rural schools have at least one unsatisfactory environmental condition—39 percent with unsatisfactory energy efficiency, 27 percent with unsatisfactory noise control, and 24 percent with unsatisfactory ventilation.[16]

**Table 1.2**
**Percent of Schools Reporting Unsatisfactory Environmental Factors by Community Type**

| Environmental Factor | Central City | Urban Fringe/ Large Town | Rural/ Small Town |
|---|---|---|---|
| Lighting | 20.4 | 17.3 | 11.4 |
| Heating | 22.8 | 19.0 | 17.0 |
| Ventilation | 31.5 | 28.2 | 23.6 |
| Indoor air quality | 22.5 | 19.0 | 17.2 |
| Acoustics for noise control | 31.6 | 26.3 | 26.8 |
| Energy efficiency | 46.1 | 40.3 | 38.6 |
| Physical security | 26.5 | 22.8 | 23.5 |
| At least one unsatisfactory environmental condition | 65.1 | 58.5 | 53.9 |

*Note: Sampling errors for estimates based on percent of schools are less than +/- 4 percentage points.*

Source: General Accounting Office, *School Facilities: America's Schools Report Differing Conditions*, Table III.5, 1996.

If the federal government increases assistance to rural schools, a worthwhile goal would be to upgrade the building heating and cooling systems. Such improvements would have lasting fiscal impacts by allowing operational savings to be shifted directly into budgets for technology and other quality programs.

**Technology.** There are tremendous needs when it comes to upgrading building space and technology systems.[17] Many rural schools remain unequipped to use modern technology (see chapter 4 for more discussion of current research on technology use in schools). The overwhelming majority—84 percent of rural schools—lack fiber optic cable, and 46 percent lack operational computer networks. Nearly half of rural schools have six or more unsatisfactory technology elements.[18] When some students do not have access to facilities that can prepare them for the twenty-first century, an uneven playing field is created. Even students attending schools within the same district may not have equal access. Generally, schools need high-quality computers, printers, modems, and infrastructure improvements such as fiber optic cable, computer networks, plus high-quality electrical wiring to provide power for this equipment. The true potential of technology cannot be realized without this supporting building infrastructure.

**New teaching formats.** Nationwide, school reform efforts have introduced new methods of instruction and new expectations for schools that have increased demands on both personnel and educational facilities. Most education reform strategies encourage teachers to move away from teaching formats that rely on the chalkboard and passive students seated in rows of desks. New teaching formats require flexible spaces that can be used for large- and small-group instruction, laboratory classrooms, and media centers with multiple information resources. According to the GAO study, many school facilities lack the necessary space and flexibility to accommodate contemporary teaching formats.[19] More than a third (37 percent) of rural schools lack adequate laboratory science facilities, and 13 percent lack an adequate media center (see Table 1.3).

**Access for individuals with disabilities.** Finally, a major challenge for rural schools has been meeting the Americans with Disabilities Act (ADA) requirements for handicapped accessibility.[20] In general, most rural primary school buildings were built prior to these

**Table 1.3**
**Percent of Schools Reporting Meeting "Not Well at All" on Selected Functional Requirements of Education Reform Activities by Community Type**

| Activity | Central City | Urban Fringe/ Large Town | Rural/ Small Town |
|---|---|---|---|
| Small-group instruction | 12.0 | 9.8 | 7.6 |
| Large-group instruction | 38.8 | 34.8 | 39.8 |
| Store student assessment materials | 29.9 | 32.2 | 31.5 |
| Display student assessment materials | 27.1 | 26.5 | 28.5 |
| Parent support | 24.2 | 23.3 | 23.1 |
| Social/health services | 27.1 | 24.4 | 28.4 |
| Teacher planning | 14.7 | 12.8 | 12.2 |
| Private areas for counseling/testing | 30.4 | 25.8 | 22.6 |
| Laboratory science | 48.3 | 43.7 | 36.9 |
| Library/media center | 13.6 | 13.9 | 12.8 |
| Day care | 76.4 | 70.2 | 82.4 |
| Before/after-school care | 54.0 | 51.1 | 66.2 |

*Note: Sampling errors range from +/- 1.3-3.5 percent.*

Source: General Accounting Office, *School Facilities: America's Schools Report*

federal mandates. Some buildings lack single-acting door hardware, adequate side clearance for passage doors, and signage. All schools, including rural schools, continue to work to upgrade their buildings to accommodate students with a broad range of abilities.

## Funding Challenges Facing Rural Schools

In 1998, the average public school building was 42 years old.[21] Many rural districts have not constructed a new building for decades. As a result, more students in rural areas attend school in buildings that are over 50 years old than do students in suburban school districts.[22] It is not unheard of for rural students to attend schools constructed a century ago. Rural school districts face a large backlog of building improvement needs as a result of both deferred maintenance and aging school buildings.[23] A 1990 survey estimated that capital needs of rural schools for deferred maintenance approached $2.6 billion, and

the costs to replace rural school facilities were estimated to be near $18 billion.[24]

Rural schools also face a unique challenge in finding funding support in both the state and federal political arenas. The political influence of rural areas has diminished considerably since World War II because of the movement of people to urban areas. In most states, rural legislators, who represent smaller numbers of voters, have less power in state legislative bodies than urban and suburban legislators. In some cases, the state political environment does not support maintaining small and rural schools. Rural school administrators may not pursue funding options for fear of being pressured to consolidate or close their schools. Because providing services is often more expensive in rural areas and these areas have less political power, many rural schools remain underfunded.

Traditionally, few state legislatures have been willing to provide financial assistance to their local school districts for capital outlay and debt service. This has resulted in local districts bearing the major burden of financing local school facilities, a challenge many rural school districts have great difficulty meeting. Data from a national survey of rural school districts suggest that because rural districts have lower enrollments, inadequate tax bases, and regulatory limits to their debt, they often cannot generate the revenues required to build school facilities.[25] Thus, many rural districts have three strikes against them. In addition, many have higher poverty levels and less ability to support local bond initiatives.

Nationwide, schools with a higher proportion of children in poverty are more likely to house their students in older facilities.[26] Residents in nonmetropolitan areas are more likely to have lower incomes than residents in metropolitan areas, and this gap in earnings has remained steady since 1991.[27] In 1997, more than 22 percent of children in nonmetropolitan counties lived in poverty compared to more than 19 percent in metropolitan counties.[28] Higher poverty levels in rural areas suggest not only that rural schools face additional challenges in helping their students learn to high standards, but also that many communities may have difficulty raising local revenues to build public school facilities.

Due to these and other factors (see chapter 2), rural districts appear to be constructing new school buildings and upgrading old ones at a

slower rate than other districts. According to a recent study, from January 1994 to June 1998, about 21 percent of districts in urban areas constructed at least one new school. This compares to only nine percent of districts outside of urban areas during the same time period.[29]

## Practical Strategies for Funding Rural Schools

Authorities in rural school districts face daunting problems related to housing students in safe and modern school buildings, but there are actions school board members and administrators can take. Exploring alternative financing and housing schemes may prove productive. Another approach is to pursue political and communications efforts to make sure the issues are known and acted upon, at both the local and state levels.

Data on the financial resources of school districts suggest that most rural communities cannot meet their building needs because of assessed valuation of real estate. This is especially true of rural school districts that have limited wealth supporting each student as a measure of financial ability. A study of some rural school districts in Virginia found that an increase in the tax levy of 10 cents per one hundred dollars of assessed valuation would raise only about $1 million in revenue.[30] This amount of money is far below what is needed to meet any facility upgrade and is insignificant in all but the smallest construction projects. At the same time, the tax burden on the citizenry this rate represented was significant. This kind of comparison points out the fact that many rural school districts do not have the wherewithal to solve their facility problems.

**State capital funding.** One way to address this situation is to share the problems of individual school districts with the entire state population. Although the majority of states do provide local school districts with some funding for capital construction and improvement, the amount is very small compared to the need. Some states provide no financial assistance whatsoever to local school districts. In other cases, states provide a set dollar amount per pupil for maintenance projects. Typically, these flat grants to school districts are meager at best. Very few states provide local school districts with full funding for capital improvements. This type of funding, however, represents an

opportunity to level the playing field for all districts because it spreads the burden of meeting construction needs to every citizen of the state.

**State building authorities.** In the absence of a state capital-funding program for local school districts, a state building authority may provide funds for school buildings. Building authorities are quasi-governmental corporations originally developed to circumvent legal debt limitations on local school districts.[31] Authorities use the credit rating of the state to obtain the best possible interest rates for bonds. Some states have local and regional building authorities, but these would not offer funding options for rural areas because of the limited fiscal ability of the local school district.

There are several reasons why a state building authority can work well for funding. The first is that such an authority can be free from the political battles associated with annual legislative appropriations. Second, a school building authority can provide services rural school districts often do without, such as financial planning and project management.

The Chicago Public Building Authority is a good example of this service. It has the capability to design and construct school buildings for the Chicago Public Schools. As a result, the number of employees the school system needs for planning, designing, and supervising construction is greatly reduced. In this instance, the school district identifies a location where it needs a school, develops the educational specifications for the building, and communicates this information to the building authority.[32] School building authority employees complete all the design and construction work for the building. Appropriate public school employees review and approve the architectural plans to insure fidelity to the educational specifications, but the work of completing the building is left to the school building authority. It is easy to see how small rural school districts would benefit from such a system operating at the state level. In addition, the authority could likely construct the building less expensively than a small school district could.

**Interest-free or tax-credit bonds.** Other funding plans can reduce the cost of modernizing or constructing rural school buildings. One approach that could assist many school districts is the provision of interest-free or tax-credit bonds to states and/or school districts. Currently, school districts pay for schools by financing municipal

bonds, and the financing cost can be very large—often amounting to as much as the original cost of the school building itself. The cost can be cut by up to 50 percent with interest-free or tax-credit bonds.[33] In 1999, Congress reauthorized a program that provides up to $400 million in interest-free bonds for the years 2000 and 2001. These Qualified Zone Academy Bonds (QZABs) currently can be used only for school modernization, not to support new construction. Several states have used these bonds, demonstrating their usefulness in financing school improvements.

**Converting vacant buildings.** Some school districts have begun to explore ways to house students in other than traditional school buildings. One example involves converting existing community buildings to school use. It is usually less expensive to convert an existing building than it is to build a new structure. In many small towns, business decline has resulted in vacant buildings, including supermarkets and offices that could serve as school buildings. This approach not only provides cost savings, it also preserves buildings.

**Sharing buildings.** An alternative other communities have chosen is sharing space with other government agencies, either in a new or existing building. Some communities have constructed schools using part of the site for community recreational facilities, which are paid for by the local governing body. Other districts have housed small schools in commercial buildings with no capital costs and only minor operational costs to the school district. These are all creative ideas that provide alternatives to constructing new buildings.

**Communicating at the state house and Capitol Hill.** Beyond pursuing alternative financing and housing schemes locally, it is also important to advocate for the issues of rural school facilities at state and federal government levels. Rural educators and school board members must make their case known to politicians and other decision makers. Raising public awareness of rural education issues can be difficult because urban and suburban areas often take center stage in presenting their school building needs. Influence can be exercised in the legislative arena, however, and rural educators should be encouraged to communicate with their representatives.

While many state legislatures do not have large numbers of rural representatives, these legislators often have longer tenures than those from more populated districts. This works to the benefit of rural

citizens because their representatives often command some important posts and committee assignments. Rural legislators can build on this advantage by forming coalitions to work for rural school issues. In addition, they can reach out to form coalitions with suburban and urban legislators to promote state funding of school facilities. Such efforts help school districts in every part of the state and in turn promote the well-being of all students regardless of residency.

By forming communication links with their legislators and serving as reliable sources of information, school board members and administrators can make sure legislators have accurate information about school facilities needs. Information can be transmitted in a variety of forms: newsletters, special reports, meetings, and personal conversations. School board members and administrators should stay in regular contact with their legislators and be well known to them.

**Communicating at home.** Sharing information about school facilities needs with all segments of the community is also very important. In the typical school district, parents of children enrolled in the public schools usually constitute only a minority of the total population and therefore do not make up the majority of voters. School board members need the support of all segments of the population to pass bond referenda. Thus, the school district must find ways to communicate to all citizens. Informational meetings provide a forum to express facilities needs, but are usually not effective in reaching nonparents. Mailings to all citizens, including electronically transmitted messages, are very important ways to reach nonparent segments of the community. Such communication, however, needs to be continuous in nature and not a special public relations maneuver to enlist the support for a special issue or a bond referendum. An ongoing report to the entire population of the school district about the accomplishments and needs of the schools should be distributed regularly through a variety of media.

## Conclusion

Rural school systems experience the same problems as schools in urban and suburban areas. They include insufficient funding for both the educational program and buildings, a lack of political support for public funding for facility improvements, and conflicting demands upon the educational program. Districts face these problems in

varying degrees of severity, but rural school districts often have fewer resources with which to address them.

The condition of a school facility can affect a student's learning experience in a variety of ways. Obviously, there are some basic conditions that need to be met. If the lighting is poor or the school is too cold or too hot, students have trouble concentrating. Lack of climate control can also limit the use of computers and other types of equipment that require air conditioning to protect them from overheating. Some schools simply lack the space to house all their students. According to research findings, all of these circumstances can adversely affect student performance.[34]

Most schools, even older schools, meet the minimal conditions needed to provide a basic education. But a surprising number of schools, even newer ones, do not have the physical infrastructure to support the space demands presented by school reforms, technology innovations, and other education trends. In our increasingly interconnected and complex world, our school facilities must be upgraded continually to meet the basic requirements of high-quality, up-to-date educational programs and approaches.

The strengths of many rural schools are the small classes and the close relationships among students and between students and teachers. Recent research suggests that small schools can even mediate the effects of poverty on student learning.[35] These strengths need to be communicated so that all citizens will appreciate the beneficial nature of small schools. Whatever solutions to school facility problems are implemented, they must capitalize upon and maintain these two strengths.

In many school districts, it is a struggle to find resources and support for new facility construction, renovations, or additions. Without some state-level funding equalization or improvements in federal aid, many of the nation's poorest rural districts will continue to educate their students in dilapidated, decaying, and outdated school facilities that endanger children's physical safety and deprive them of a quality education. In rural districts fortunate enough to generate funding support for facility improvement, intensive planning and research are required to construct a facility that meets current needs and provides the flexibility to meet future demands. The school building is not just a physical plant but an environment for learning. In

many rural communities, the school is the most important public institution, symbolizing community unity and progress. Equitable school facility improvement for rural, suburban, and urban children alike presents one of the nation's biggest challenges for the twenty-first century.

## Notes

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